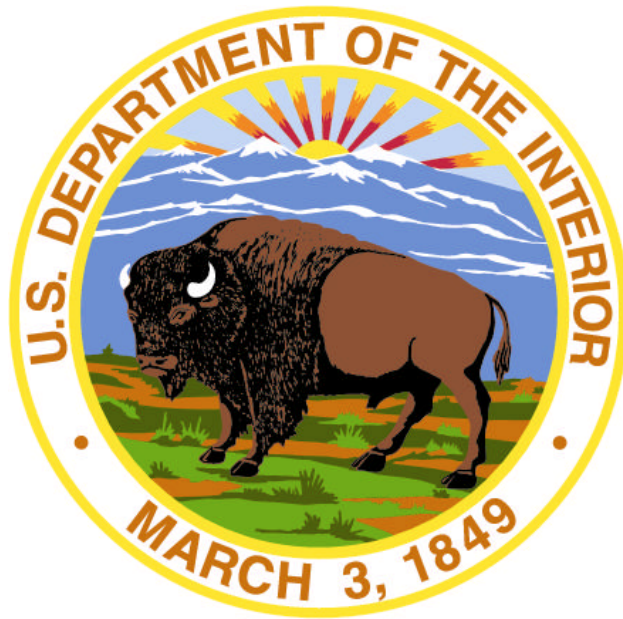


**United States
Department of the Interior**



**Aviation Safety Review
Fiscal Year 00**

**Prepared by
Office of Aircraft Services
Aviation Safety Office
June, 2001**

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In FY 00 the Department of the Interior flew 91,096.9 hours, at a cost of nearly \$79 million.. Despite a demanding fire season, Interior recorded only five statistically accountable aircraft accidents at an annual rate of 5.48 per 100,000 flight hours. There were six fatalities.

While higher than that of last year's rate of 5.37, it is significantly lower than previous years. During the past twenty-five years Interior has experienced annual accident rates as high as 18.87 per 100,000 flight hours (FY 75) and as low as 3.73 per 100,000 flight hours (FY 85).

The National Transportation Safety Board investigated all five of our accidents with assistance from the Office of Aircraft Services. Mishap investigations often reveal important information that may improve working conditions or mishap prevention measures. This year, in cooperation with the National Transportation Safety Board, key issues associated with each accident have been identified and are included in this report. These issues are based on facts discovered during the investigations and may or may not be included in the final reports. We feel this information is important and will provide our aviation community with timely information necessary to help prevent future accidents.

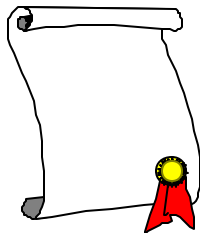
We hope you will find the information in this safety review useful. Comments or suggestions may be directed to the OAS Aviation Safety Office at (208) 387-5800.

I want to express my thanks to all personnel throughout the Department of the Interior for your efforts in enabling the Department of the Interior to safely accomplish our aviation missions. In particular, I would like to recognize those individuals, identified on page ii of this report that received Aviation Safety Awards during FY 00.

I wish everyone a safe and successful FY 01.



Michael A. Martin
Acting Director, Office of Aircraft Services



Interior Aviation Safety Award Recipients - FY 00

In response to our request for Safety Award Nominees, the following DOI personnel were recognized as follows:

Award for Significant Contributions to Aviation Safety

Shad Sitz - BLM
Steve Arasim - BLM

Award for In-Flight Actions

Mark Santee - BOR

Award of Honor

Robert C. Foster - FWS

Award of Distinction

Ronald G. Hook - OAS

Award of Merit

Rusty J. Warbis - BLM

U.S. Department of the Interior

Aviation Safety Review FY 00

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Section I

FY 00 Aviation Accidents

In FY 00 the Department of the Interior flew 91,096.9 hours, recording five statistically accountable aircraft accidents at an annual rate of 5.48 per 100,000 flight hours. There were six fatalities.

The National Transportation Safety Board investigated all five of our accidents with assistance from the Office of Aircraft Services. Mishap investigations often reveal important information that may improve working conditions or mishap prevention measures.

All agency employees share responsibility for safety and need to be able to recognize unsafe conditions should they develop. Those involved in flight activities need to have an understanding of aviation policy and procedures. When accidents occur, it is important that we learn from them to help ensure a safer future.

In cooperation with the National Transportation Safety Board, key issues associated with each accident have been identified and are included in this report. These issues are based on facts discovered during the investigations and may or may not be included in the final reports. We feel this information is important and will provide our aviation community with timely information necessary to help prevent future accidents.

The five Interior accidents involved three airplanes and two helicopters. Pages 2 through 11 provide information about each of the mishaps.

**AIRCRAFT ACCIDENT
00-0F01-O-FWS**

AIRCRAFT DATA: Cessna 185	DATE: February 7, 2000
BUREAU: U.S. Fish and Wildlife Service	LOCATION: Loveland, CO
INJURIES: Minor -1	SOURCE: Fleet



Narrative: On February 7, 2000, approximately 1215 Mountain Standard Time, a Cessna 185F, N721, owned and operated by the U.S. Department of the Interior, was substantially damaged when it collided with terrain while landing at the Fort Collins/Loveland Municipal Airport, Loveland, Colorado. The commercial certificated first pilot received minor injuries and the commercial certificated flight instructor was not injured. Visual meteorological conditions prevailed for the public use instructional flight, and a company VFR flight plan had been filed. The flight originated at Broomfield, Colorado approximately 1030. According to the accident report submitted, the flight instructor, seated in the right seat, had been giving the commercial (first) pilot, seated in the left seat, a biennial flight review (BFR) to satisfy the requirements of FAR (Federal Aviation Regulation) 61.56(c). At the conclusion of the BFR, it was agreed that the flight instructor would make a full stop landing (it was later learned the instructor was not current in aircraft category and class). A normal approach to runway 15 was flown in a "moderate" right crosswind (5 to 10 knot, variable). A full stall landing was made with a slight crab into the crosswind. The tail wheel touched down first, followed by the main gear. The airplane then veered right and ground looped. The left main landing gear collapsed, and the airplane came to a halt off the right side of runway 15.

Key Issues

- Flight Plans
- Flight Following
- Access to Flight Controls
- Flight Instructor Currency
- Shoulder Harness
- Aircraft Maintenance
- Personal Protective Equipment
- Pilot In Command

Discussion

The flight plan filed was not in accordance with OPM 00-2

Flight following was not in accordance with OPM 00-2.

The flight instructor was operating flight controls without authorization required by 351 DM 1.2B.

Pilot-in-command did not know the flight instructor was not current in either tail wheel aircraft or this model of aircraft.

The aircraft was equipped with diagonal single-strap shoulder harnesses. Side loads during the accident allowed the pilots to slide out of the shoulder harnesses.

Aircraft was over due a 100-hour inspection.

Both pilots were not wearing helmets. (Helmets are not required by DOI policy).

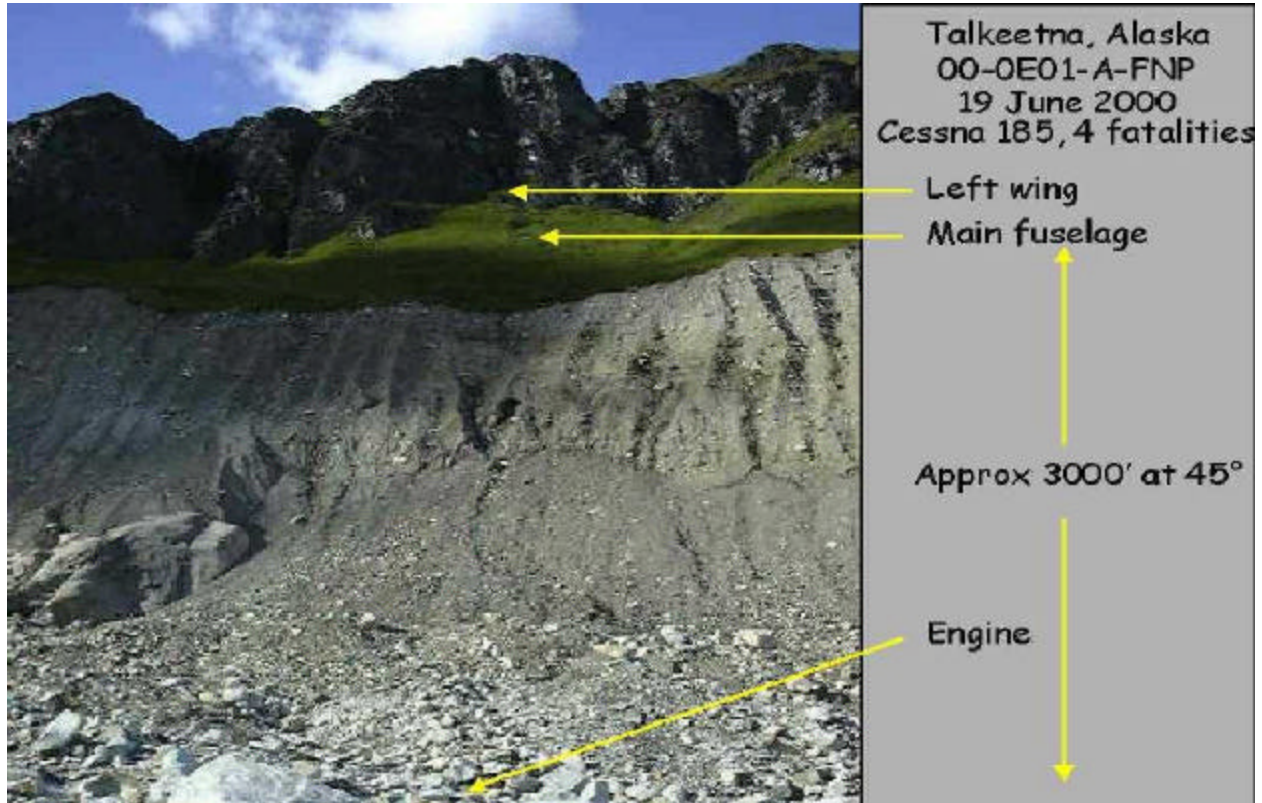
The pilot in command was not designated for this mission in accordance with 351 DM 3.1B.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was the failure of the pilot-in-command to maintain directional control, resulting in an inadvertent ground loop.

Contributing Factors: A factor was the crosswind.

AIRCRAFT ACCIDENT
00-0E01-A-FNP

AIRCRAFT DATA: Cessna 185	DATE: June 19, 2000
BUREAU: National Park Service	LOCATION: Talkeetna, AK
INJURIES: Fatalities - 4	SOURCE: Rental



Narrative: On June 19, 2000, about 1815 Alaska Daylight Time, a wheel/ski equipped Cessna 185E airplane, N1589F, was destroyed when it crashed in a remote area of the Denali National Park and Preserve, about 52 miles west of Talkeetna, Alaska, at latitude 62 degrees, 42.489 minutes north, and longitude 151 degrees, 45.385 minutes west. The airplane was being operated as a visual flight rules (VFR) U.S. Government flight by the U.S. Department of the Interior, National Park Service, Talkeetna, Alaska, when the accident occurred. The airplane, provided by Hudson Air Service Inc., Talkeetna, was utilized as an on-demand Title 14 CFR Part 135 flight. The airline transport certificated pilot, and the three passengers received fatal injuries. A VFR flight plan was filed. The flight was conducted to transport a National Park Service ranger, and two volunteer rangers to the Denali National Park base camp, located at 7,200 feet msl on the Kahiltna glacier, about 48 miles northwest of Talkeetna. The three rangers were to begin mountain patrol operations on Mt. McKinley. The closest official weather observation station is Talkeetna. At 1757, one ranger aboard the airplane contacted the Talkeetna Ranger Station by radio and stated the flight was returning to Talkeetna. About 1800, the pilot contacted an air taxi pilot on the ground at the base camp, and reported that weather conditions had closed in over the

Kahiltna glacier, preventing a landing, and he was diverting toward an area west of the base. On June 19, 2000, at 1753, an Aviation Routine Weather Report (METAR) was reporting in part: Wind, 220 degrees (true) at 13 knots, gusts to 21 knots; visibility, 10 statute miles; clouds and sky condition, 2,500 feet scattered, 4,100 feet broken, 4,900 feet overcast; temperature, 55 degrees F; dew point, 44 degrees F; altimeter, 29.68 inHg; remarks, pressure rapidly rising.

Key Issues

- Weather Briefing
- Emergency Locator Transmitters
- Required Maintenance
- Aircraft Configuration
- Communications
- DOI-Conducted Briefings

Discussion

Pilot encountered unanticipated adverse weather enroute to Denali Base Camp. Post accident investigation found no evidence that the pilot received a weather briefing for this flight.

No reports of an emergency ELT signal from the accident aircraft.

At the accident site the recording hour meter in the airplane's tachometer indicated the aircraft had flown 11.9 hours beyond the next required inspection time.

Flap handle control was found in the second notch (20 degrees of flap). The aircraft Operator's Manual indicates a significant reduction in structural strength with the flaps extended.

Radio communications have been reported as marginal between Talkeetna and base camp. Reliable radio communications along this route could improve flight safety by allowing weather reports to be readily transmitted between base camp and transiting aircraft.

Contract pilots and organizations would benefit from, but generally do not participate in, DOI-conducted briefings, such as: mishap reviews, hazard reporting procedures, and safety policies.

The accident is under investigation by the NTSB; preliminary information is subject to change.

AIRCRAFT ACCIDENT
00-0F02-A-LLM

AIRCRAFT DATA: Cessna 337	DATE: July 12, 2000
BUREAU: Bureau of Land Management	LOCATION: Battle Mountain, NV
INJURIES: None	SOURCE: Rental



Narrative: On July 12, 2000, at 1845 hours Pacific Daylight Time, a Cessna 337G, N3273D, landed gear up at the Battle Mountain, Nevada, airport. The airplane was operated by the U.S. Department of the Interior, as a public-use airplane under 14 CFR Part 91, and sustained substantial damage. The commercial pilot and one passenger were not injured. Visual meteorological conditions existed for the cross-country flight that had departed the Boise, Idaho, airport at an unknown time, and was scheduled to terminate at Battle Mountain. A company Visual Flight Rules (VFR) flight plan had been filed. In an interview with a Federal Aviation Administration inspector, the pilot stated that he forgot to put the landing gear down. He indicated that because he had kept his airspeed up during the descent, the landing gear warning horn did not activate. He had flown the airplane earlier that day from Battle Mountain to Boise to exchange firefighting crews, and no discrepancies were noted with the landing gear system.

Key Issues

- Checklist Usage
- Landing Gear Warning Horn
- Crew Resource Management (CRM)

Discussion

Pilot-in-command did not use a checklist and forgot to lower the landing gear.

The landing gear warning horn, transmitting from the airplane's cabin speaker and not the intercom system, was difficult to hear when wearing a headset. The landing gear warning horn was similar in volume and tone to the stall warning horn.

The pilot reported that he did not ask his passenger for assistance with CRM-safety of flight issues such as watching for traffic or reading the checklist.

The accident is under investigation by the NTSB; preliminary information is subject to change.

AIRCRAFT ACCIDENT
00-0F03-C-LLM

AIRCRAFT DATA: Bell 206L-1	DATE: August 3, 2000
BUREAU: Bureau of Land Management	LOCATION: Montello, NV
INJURIES: Fatalities 1; Serious - 1	SOURCE: Contract



Narrative: On August 3, 2000, at 1855 hours Pacific Daylight Time, a Bell 206L-1, N10864, was destroyed when the helicopter abruptly rolled to the right and impacted terrain during hover after takeoff at Montello, Nevada. The helicopter was operated under 14 CFR Part 91 in support of firefighting activities as a public-use aircraft by the United States Bureau of Land Management. One passenger was fatally injured and the other passenger was seriously injured. The commercial certificated pilot was not injured. Visual meteorological conditions prevailed and no flight plan was filed for the positioning flight that was destined for Wells, Nevada. There were six ground-based crewmembers affiliated with the operation of the helicopter that witnessed the accident. All of the witnesses were together as a group about 50 feet south of the departing helicopter. The witnesses provided a consistent opinion that the helicopter was clear of the ground, in a stable hover at 2 to 5 feet above the ground, when it suddenly rolled to the right and crashed. Two witnesses described the rolling maneuver as "hard" and "violent." There was some disagreement about whether the helicopter rolled to the right until inverted and then bounced back to the left back up on its skids, versus rolling to the right one complete revolution to end up upright. Some commented that the flying dirt and debris from the helicopter was confusing. None of the witnesses described the maneuver as a yawing or spinning maneuver, but rather as a roll about the longitudinal axis. The pilot reported that between 1500 and 1830 there was a windstorm with wind gusts of 50 - 60 knots associated with a thunderstorm that passed west of their location. He tied down the main and tail rotor blades before the

windstorm, and by 1845, the weather was clear enough to return to Wells and the wind had decreased to 5 - 10 knots. He preflighted the helicopter and untied the rotors. He said that the start and pretakeoff checks were normal. He performed a normal hydraulics-off control check. He "picked the helicopter up" to a 3-foot hover height and glanced down at the engine torque gauge. Suddenly, the helicopter did a "violent snap roll" to the right coming to rest upright. He estimated the whole event only lasted about 1/4 second. The pilot added that there was no yaw associated with the event, it was pure roll, and the engine operated "fine" the entire time. The engine was still running after the accident and he had to shut it off manually. There was no change in audible tone prior to the roll. He did not recall any movement or abnormal feedback in the antitorque pedals or the cyclic and collective controls prior to the accident. The pilot emphasized the violent nature of the roll. It was the pilot's opinion that even an abrupt, full right cyclic input could not have produced the rate of roll he experienced. The rotor blade tie-down retention straps were found stowed inside the cabin after the accident.

Key Issues

- Aviation Life Support Equipment

Discussion

Use of flight helmets saved one life.
Dual shoulder harness restraint system.

The accident is under investigation by the NTSB; preliminary information is subject to change.

**AIRCRAFT ACCIDENT
00-0F04-C-LLM**

AIRCRAFT DATA: Bell 412	DATE: August 13, 2000
BUREAU: Bureau of Land Management	LOCATION: Cold Springs, NV
INJURIES: Fatal - 1	SOURCE: Contract



Narrative: On August 13, 2000, at 1646 hours Pacific Daylight Time, a Bell 412, N174EH, collided with mountainous terrain while conducting a water drop on a wildfire along a ridgeline near Cold Springs, Nevada. The helicopter was operated by the Bureau of Land Management as a public-use firefighting mission under the provisions of 14 CFR Part 91, and was destroyed. The airline transport pilot sustained fatal injuries. Visual meteorological conditions prevailed for the accident flight, and a company flight plan was filed. The helicopter had departed the Twin Peaks Helibase located at Cold Springs at 1605. Weather reported by another firefighting pilot who was flying in the area at the time of the accident was about 79 degrees Fahrenheit, with winds from the north-northwest at 10-15 knots. The accident site elevation was about 6,300 feet msl. An approximate density altitude of 9,100 feet was calculated for the accident location. The accident helicopter was the lead in a flight of two helicopters that was to make a bambi bucket water drop along the ridgeline, at his discretion, with the trailing pilot also making a water drop behind the accident helicopter. After takeoff from the helibase the helicopters traveled in a northeast direction to the ridgeline, and the lead pilot had made his turn and was paralleling the ridgeline. The trailing pilot, who was about 1 mile behind, saw the accident helicopter make a sudden 90-degree left (descending) turn and impact the downsloping mountainous terrain shortly thereafter. There were no radio communications with the accident pilot prior to the turn. The trailing pilot estimated the airspeed during the approach to the ridgeline to be about 20 knots. The accident site

was located on the side of a mountain with approximately a 60-degree slope facing south towards the helibase. Pinion trees and scrub brush sparsely covered the mountainside, with loose dirt and rocks typical of high desert terrain. A path of ground scars and wreckage debris was observed distributed over a 673-foot distance on a median magnetic bearing of 155 degrees. The first observed point of contact was approximately 300-feet upslope from the main wreckage and consisted of water erosion furrows which emanated from a circular impression centered on an unburnt bush. The hook for the bambi bucket was found 90-feet from the first observed point of contact. The release mechanism and the bambi bucket were located 2 feet beyond the hook, entangled in a dead pinion tree. The bambi bucket was on a short line approximately 25 feet long. The skid toes were found in the dirt about 25 feet from the pinion tree and entangled bucket. The cross tubes were found attached to the main fuselage. Separated skid tube components were scattered along the wreckage path at various locations. Six inches of one tail rotor blade was separated from the tail rotor and found approximately 50 feet to the right side of the first observed point of contact looking down slope towards the main wreckage. The aft portion of the tail boom structure was found about 10 feet from the main wreckage and the forward portion of the tail boom structure was found approximately 65 feet from the main wreckage. All four main rotor blades were found attached to the hub, with the outboard 6 inches of one blade found approximately 20 feet from the main wreckage in the debris field. Visual examination of the No. 1 engine (left) showed that multiple blades were separated from the power turbine wheel. The blade separations were jagged and of irregular length compared to one another. Evidence of indentations were observed inside the exhaust stack. No filament stretch was observed on any of the caution/warning lights.

<u>Key Issues</u>	<u>Discussion</u>
<ul style="list-style-type: none"> • Pilot repeatedly took excessive and unnecessary risk 	<p>Helicopter</p> <p>Managers</p>
<ul style="list-style-type: none"> • Training 	<p>Regularly provide training for contract pilots and personnel.</p>
<ul style="list-style-type: none"> • Utilization of appropriate aircraft 	<p>Dispatching Officials</p>
<ul style="list-style-type: none"> • DOI Safecom System 	<p>Review/re-evaluate the DOI Safecom system</p>
<ul style="list-style-type: none"> • Contract Language 	<p>Clarification of DOI Exclusive-Use Contract language concerning bucket operations and aircraft performance.</p>

The accident is under investigation by the NTSB; preliminary information is subject to change.

Section II

FY 97, FY 98, and FY 99 Aviation Accidents - Follow-up

At the time the Annual Safety Review is published each year many accidents have not yet been finalized by the National Transportation Safety Board (NTSB). To complete the information flow, the following material pertains to accidents presented in the FY97, FY98 and FY99 Aviation Safety Review.

AIRCRAFT ACCIDENT 97-7F04-C-FNP

AIRCRAFT DATA: Bell 205A	DATE: September 12, 1997
BUREAU: National Park Service	LOCATION: Sequim, Washington
INJURIES: Fatal - 3; Serious - 5	SOURCE: Contract

Narrative: The mission was flown using a contract helicopter to assist in a search for a lost hiker in the Buckhorn Wilderness Area of the Olympic National Forest. Instrument meteorological conditions prevailed at the departure point with visibility less than one-quarter mile. The pilot had landed at a mountain helispot to pick up passengers. According to ground and passenger witnesses, the takeoff was vertical into fog and a very low ceiling. Shortly after takeoff, the aircraft collided with mountainous terrain. The aircraft was destroyed. There were three fatalities and five passengers were seriously injured.

Probable Cause: The National Transportation Safety Board determined the probable cause of this accident was the pilot's intentional flight into known adverse weather conditions in mountainous terrain.

Contributing Factors: None noted.

**AIRCRAFT ACCIDENT
98-8F03-A-LLM**

AIRCRAFT DATA: Cessna TU206G	DATE: July 29, 1998
BUREAU: Bureau of Land Management	LOCATION: Burns, OR
INJURIES: Minor - 1	SOURCE: Rental

Narrative: On July 29, 1998, at 1215 Pacific daylight time, a Cessna TU206G, N756YC, registered to a private owner and operated by the Bureau of Land Management as a Public Use aircraft, experienced a loss of engine power. During the forced landing on a road located approximately 33 miles southeast of Burns, Oregon, the airplane collided with a fence. Visual meteorological conditions prevailed at the time and a company flight plan was filed. The airplane was substantially damaged and the airline transport pilot received minor injuries. The passenger was not injured. The flight had originated from Vale, Oregon, about two hours prior to the accident. Personnel from the Office of Aircraft Services, Boise, Idaho, reported that the purpose of the flight was for fire spotting. The pilot was in contact with the company and reported to the dispatcher that the engine had experienced a loss of power. The pilot initiated a forced landing to a county road. During the landing roll, the airplane collided with a barb wire fence.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was fatigue failure of the crankshaft.

Contributing Factors: None noted.

**AIRCRAFT ACCIDENT
98-8F04-C-LLM**

AIRCRAFT DATA: Bell 212	DATE: August 8, 1998
BUREAU: Bureau of Land Management	LOCATION: Juntura, OR
INJURIES: None	SOURCE: Contract

Narrative: On August 8, 1998, approximately 1500 Mountain daylight time, a Bell 212, N291B, registered to Air One Helicopters, Inc., being operated by the Bureau of Land Management (Vale District), and being flown by an airline transport pilot, incurred substantial damage during a single engine autorotation landing following a total loss of power in the number one engine. The accident occurred approximately nine miles northwest of Juntura, Oregon. The pilot was uninjured. Visual meteorological conditions prevailed and no flight plan was filed with the FAA however, a company flight plan was in place. The flight, which was engaged in fire fighting, was to have been operated as Public Use mission. According to the pilot, the helicopter was in a hover approximately 100-50 feet above a large pond having just filled the dump bucket. As the pilot began to transition into a climb he perceived a loss of lift followed by a "low RPM" audio warning and then visual warning lights. He immediately began to maneuver towards the nearby beach and attempted to release the bucket and cable. The initial release was unsuccessful but the second effort resulted in the cable detaching from the hook. The pilot executed a landing in soft mud at the edge of the pond, during which damage to the rotor blades occurred due to contact with a dead tree. Additional damage was noted on the underside of the ship and in the control system.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was the pilot-in-command's failure to maintain proper clearance between the long line cable and hell hole structure resulting in airframe contact and binding of the cable. This resulted in separation/disabling of the fuel control solenoid and a subsequent restriction/cessation of fuel flow to the # 1 engine.

Contributing Factors: Contributing factors were separation of the #1 engine push/pull rod and a tree.

AIRCRAFT ACCIDENT
98-8F05-C-BIA

AIRCRAFT DATA: Aerospatiale SA316B	DATE: August 27, 1998
BUREAU: Bureau of Indian Affairs	LOCATION: Porterville, CA
INJURIES: None	SOURCE: Contract

Narrative: On August 27, 1998, at 1545 hours Pacific daylight time, an Aerospatiale SA316B, N605RA, operated by the U.S. Department of the Interior, sustained substantial damage after entangling a bambi bucket in a tree in Porterville, California. The airline transport pilot, the sole occupant, was not injured. The Public Use aircraft was performing a fire mission at the time of the accident. No flight plan was filed and visual meteorological conditions prevailed. Witnesses saw the helicopter fly down the side of a ridge with the bambi bucket on a 100-foot-long line. The bucket became entangled in some trees and the line snapped and wrapped itself around the tail rotor. The tail rotor gearbox separated and the helicopter spun to the ground and rolled down a steep slope. A Federal Aviation Administration inspector from the Fresno, California, Flight Standards District Office reported that there were wire marks on the tail rotor blades and around the output shaft of the gearbox.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was the pilot's failure to maintain adequate in-flight clearance between the bucket and the trees resulting in the entanglement/separation of the long line and subsequent impact with and separation of the tail rotor assembly.

Contributing Factors: The National Transportation Safety Board determines that a factor of this accident was the trees.

AIRCRAFT ACCIDENT
99-9F02-A-FWS

AIRCRAFT DATA: Cessna TR182	DATE: November 6, 1998
BUREAU: U.S. Fish and Wildlife Service	LOCATION: Desert Aire, WA
INJURIES: Fatalities - 2 Serious - 1	SOURCE: Rental

Narrative: On November 6, 1998, approximately 1225 Pacific standard time, a Cessna TR182, N756YE, operated by Kennewick Aircraft Services Inc. of Kennewick, Washington under contract to the U.S. Fish & Wildlife Service as a Public Use waterfowl survey flight, struck power lines across the Columbia River near Desert Aire, Washington, and subsequently crashed and sank into the river. The airplane sank to the river bottom (approximately 15 feet deep), the commercial pilot-in-command of the aircraft was able to escape the aircraft and was rescued by a boat on the river, but sustained serious injuries in the accident. Two U.S. Fish & Wildlife Service employees aboard the aircraft, who were acting as observers for the waterfowl survey, did not escape the submerged aircraft and were fatally injured. The flight departed Vista Field, Kennewick, Washington, and was to have been a local flight. Visual meteorological conditions were reported at the Hanford, Washington, weather observation station (approximately 9 nautical miles southeast of the accident site) at 1150. A company visual flight rules (VFR) flight plan had been filed. The operator possessed an FAA waiver from the minimum altitude requirements of 14 CFR 91.119(c). This waiver authorized the pilot to operate at altitudes below 500 feet above ground level (AGL) on aerial survey flights, provided aircraft were not operated closer than 500 feet to persons on the surface. Witnesses reported that at the time of the accident, the airplane was flying eastbound (downstream) at low altitude. The airplane struck the power lines which cross the river between the Priest Rapids Dam and the Vernita Bridge (where Washington State highway 24 crosses over the river), approximately 2 miles west of the Vernita Bridge. There are two groups of transmission lines which cross over the river at this point, a westernmost (upstream) group mounted on towers rising to approximately 194 feet AGL and an easternmost (downstream) group on taller towers. The transmission line support towers on each riverbank are depicted as group obstructions on the Seattle Sectional Aeronautical Chart, with the chart depicting the towers as being 280 feet AGL. The airplane struck and severed ground/support cables running between the tops of the westernmost group of towers. The FAA on-scene investigator reported that the cables the aircraft struck were 5/8 inch in diameter (the high-tension cables, mounted on supports below the tops of the towers, are approximately 1 inch in diameter.)

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was the pilot's failure to maintain adequate altitude and/or clearance over a power line crossing the river, resulting in collision with a static wire at the top of the crossing structure.

Contributing Factors: The National Transportation Safety Board determines that factors included the static wire, and inadequate marking of the static wire.

AIRCRAFT ACCIDENT
99-9E01-O-PAS

AIRCRAFT DATA: Supercub PA-18	DATE: February 3, 1999
BUREAU: Office of Aircraft Services	LOCATION: Anchorage, AK
INJURIES: None	SOURCE: Fleet

Narrative: On February 3, 1999, about 1030 Alaska standard time, a ski equipped Piper PA-18-150 airplane, N7875D, sustained substantial damage while taxiing at Lake Hood, Anchorage, Alaska. The airplane was being operated as a visual flight rules (VFR) local area flight when the accident occurred. The airplane was operated by the U.S. Department of the Interior, on a Public Use mission. The solo airline transport pilot was not injured. Visual meteorological conditions prevailed, and VFR company flight following procedures were in effect. In his written statement to the National Transportation Safety Board, the pilot reported that he was returning to a maintenance vendor's hangar after completing a maintenance operational check flight. He said that while taxiing on an ice covered parking area, he applied power to taxi up a small incline. He said that as the airplane's skis went over the top of the incline, he closed the throttle, and reached for mixture control cut off. He noted that his sleeve caught on the throttle control, advancing it to the open position. He said that he was unable to stop the airplane, and the left wing struck a parked maintenance tug. The left wing sustained substantial damage. The pilot noted that there were no pre-accident mechanical anomalies with the airplane.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was the pilot's use of excessive taxi speed.

Contributing Factors: The National Transportation Safety Board determines that factors associated with the accident were an icy taxi area, and the inadvertent activation of the throttle.

AIRCRAFT ACCIDENT
99-9F03-N-IFG

AIRCRAFT DATA: Hiller Soloy	DATE: February 28, 1999
BUREAU: Idaho Fish and Game Department	LOCATION: Yellow Pine, ID
INJURIES: None	SOURCE: Contract (MOU)

Narrative: On February 28, 1999, about 1330 Mountain standard time, a Hiller UH-12E, N2239, registered to and operated by Valley Helicopter Service, was substantially damaged after it collided with terrain while landing at Taylor Ranch airstrip, located 28 nautical miles northeast of Yellow Pine, Idaho. A company visual flight rules (VFR) flight plan was filed for the 14 CFR 135 aerial observation flight. The commercial pilot and his two passengers were uninjured. The flight originated from Taylor Ranch approximately ten minutes prior to the accident. The operator was contracted by the Idaho Department of Fish and Game, to survey for elk in the Frank Church Wilderness Area. The pilot, accompanied by two observers, departed the airport for the second surveillance flight of the day. Shortly after departure, the pilot was contacted by a ground crew member and informed that during the departure, a 55-gallon fuel barrel was knocked over. The pilot elected to return to the airport to inspect the helicopter for possible damage. The pilot made a normal approach to the airport and was established in a hover taxi, about 20 feet AGL, when the helicopter suddenly began to descend. The pilot stated he pulled full up-collective, however the helicopter continued to descend and impacted terrain in a slightly nose-low attitude. After contacting the ground, the pilot released the collective and the main rotor blades struck and severed the tail boom. At the time of the accident, the helicopter was operating near maximum gross weight limits at an elevation of 3,835 feet mean sea level (MSL). The pilot stated the engine was producing rated power and there were no indications of a powerplant failure. The weather at the accident site, as reported by the pilot, was 50 degrees Fahrenheit, winds calm, and a visibility of 15 miles. The main cabin area was intact, but sustained substantial impact damage. The left skid was partially collapsed. The tail boom was severed and leading edge damage was noted to the main rotor blades. Control continuity was maintained from the cyclic to the cyclic pylon assembly and from the collective to the control rotor assembly. Four bolts that secure the ballast plate to the rotor assembly were found fractured. The assembly was removed and shipped to the NTSB materials lab for inspection. A metallurgist from the lab reported that the all four bolts displayed features that are consistent with overstress separation.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was: Altitude deviation during aerial taxi for undetermined reasons.

Contributing Factors: None noted.

AIRCRAFT ACCIDENT
99-9E02-C-LLM

AIRCRAFT DATA: Bell 206B-III	DATE: July 8, 1999
BUREAU: Bureau of Land Management	LOCATION: Deadhorse, AK
INJURIES: None	SOURCE: Contract

Narrative: On July 8, 1999, about 1230 Alaska daylight time, a Bell 206B-III helicopter, N47122, sustained substantial damage during engine start-up, about 75 miles southwest of Deadhorse, Alaska. The helicopter was being operated as a visual flight rules (VFR) U.S. Government flight by the U.S. Department of the Interior, Bureau of Land Management, Fairbanks, Alaska, when the accident occurred. The helicopter, provided by Tundra Copters Inc., Fairbanks, Alaska, was an on-demand 14 CFR Part 135 flight. The certificated commercial pilot, and the three passengers, were not injured. Visual meteorological conditions prevailed. Company VFR flight following procedures were in effect. During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on July 8, 1999, the Director of Operations for Tundra Copters Inc. reported the pilot loaded his passengers into the helicopter at a remote biological survey site. The pilot then began an engine start, but a main rotor blade tiedown strap was still attached to one of the rotor blades. As the rotor blades began to turn, the strap struck the helicopter's vertical stabilizer. The helicopter received damage to the tail boom, and the stabilizer.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was: A failure of the pilot-in-command to perform an adequate preflight inspection, and remove a rotor blade tie-down strap.

Contributing Factors: None noted.

**AIRCRAFT ACCIDENT
99-9F04-C-LLM**

AIRCRAFT DATA: Air Tractor AT-802A	DATE: August 19, 1999
BUREAU: Bureau of Land Management	LOCATION: Elko, NV
INJURIES: None	SOURCE: Contract

Narrative: On August 19, 1999, at 1426 hours Pacific daylight time, an Air Tractor AT-802A, N9190G, collided with a tree during a fire fighting aerial retardant application near Elko, Nevada. The aircraft was operated as a Public Use aircraft under contract to the U.S. Department of the Interior, Bureau of Land Management (BLM), for wildfire suppression operations. Visual meteorological conditions prevailed for the local area aerial application operation. The aircraft sustained substantial damage. The commercial pilot, the sole occupant, was not injured. The flight originated about 1400 hours at the Elko airport on the day of the accident and was responding to a wildfire on BLM land. The pilot reported that he was following a larger aircraft on a fire application run. He successfully dropped half his retardant load on the fire and went around for another run. On the second pass, the pilot stated the aircraft encountered a strong downdraft as it neared the release point and the pilot recovered at a low altitude. During this process, the left outer wing collided with the top of a juniper tree. The pilot returned to Elko and landed. The outboard four feet of the wing leading edge was crushed aft and sustained rib damage.

Probable Cause: The National Transportation Safety Board determines that the probable cause of this accident was the pilot's failure to maintain an adequate terrain/obstacle clearance altitude margin while engaged in fire fighting operations.

Contributing Factors: None noted.

Section III

Accident Statistics and Trends - Introduction

This section of the review presents a statistical overview of aviation accidents, incidents, and flight times within the Department of the Interior (DOI). Whenever possible, total flight times and accidents are subdivided into fleet, contract, and rental aircraft. Historical records from previous years are also included for comparison.

The statistics are divided into two major parts. The first reflects DOI accident history and rates from FY 75 to FY 00. Several comparisons are presented using data collected from FY 96 through FY 00. The last section reviews events reported through the SAFECOM reporting system.

All accident rates in this report are based on 100,000 flight hours. They are determined by dividing the number of accidents by the flight hours, then multiplying that number by 100,000. The historical average is determined by dividing the total number of accidents by the total flight hours recorded since FY 75, then multiplying that number by 100,000.

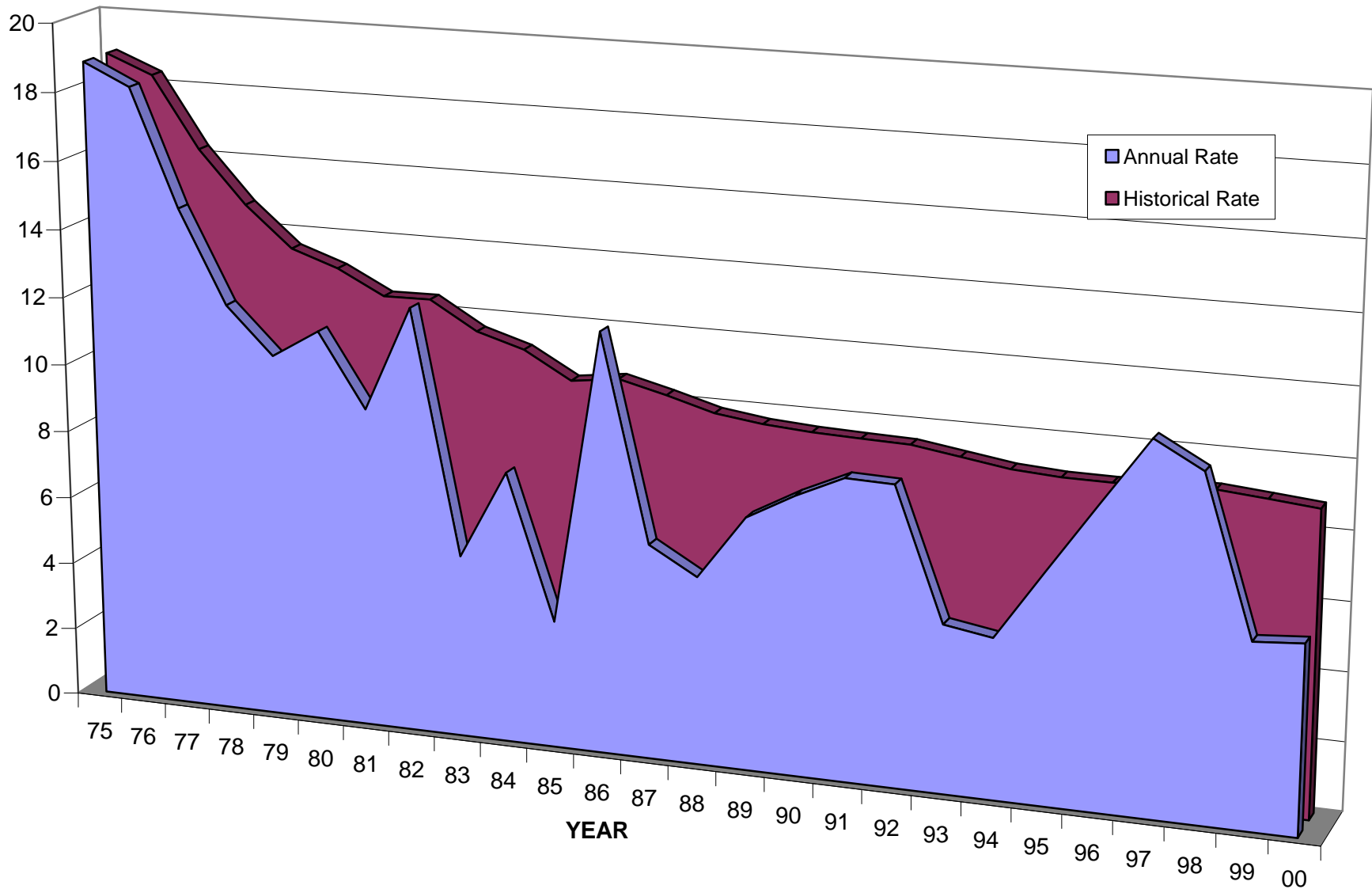
Historical Records from FY 75 to FY 00

In FY 00 the Department of the Interior flew 91,096.9 hours. Despite a demanding fire season, Interior recorded only five statistically accountable aircraft accidents for an annual rate of 5.48 per 100,000 flight hours.

Graph 1/Table 1	ACCIDENT RATE HISTORY. A comparison of annual and historical accident rates from FY 75 through FY 00
Graph 2/Table 2	TOTAL FLIGHT HOURS. A comparison of annual flight hours which are subdivided according to the source (Fleet, Rental, and Contract). The historical column reflects cumulative flight times.
Graph 3/Table 3	FATAL ACCIDENT RATE HISTORY. A summary of annual and historical rates from FY 75 through FY 00
Graph 4/Table 4	FATALITY RATE HISTORY. A comparison of annual and historical fatality rates from FY 75 through FY 00
Graph 5/Table 5	BUREAU FLIGHT HOURS. A comparison of bureau flight hours for FY 00 BUREAU STATISTICS. Bureau flight hours and accidents from FY 96 to FY 00
Graph 6	SOURCE COMPARISONS. A comparison of flight hours, accidents, and accident rates by source (Fleet, Rental, and Contract) from FY 96 to FY 00
Graph 7	AIRCRAFT COMPARISONS. A comparison of airplane and helicopter accidents and accident rates from FY 96 to FY 00 Graph 7a - AIRPLANE PHASE OF FLIGHT COMPARISONS. A comparison of number of airplane accidents per phase of flight FY 96 to FY 00 Graph 7b- HELICOPTER PHASE OF FLIGHT COMPARISONS. A comparison of number of helicopter accidents per phase of flight from FY 96 to FY 00
Graph 8	FATAL ACCIDENT COMPARISONS. A comparison of airplane and helicopter fatal accidents and fatal accident rates from FY 96 to FY 00

ACCIDENT RATE HISTORY

RATE



	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
■ Annual Rate	18.87	18.22	14.81	12.10	10.73	11.57	9.41	12.49	5.36	7.96	3.73	12.30	6.29	5.50	7.37	8.14	8.78	8.74	4.91	4.68	6.72	8.73	10.71	9.95	5.37	5.48
■ Historical Rate	18.87	18.32	16.25	14.73	13.56	13.09	12.39	12.41	11.60	11.19	10.41	10.59	10.25	9.86	9.68	9.58	9.53	9.49	9.28	9.07	8.98	8.97	9.03	9.06	8.94	8.81

Graph 1

ACCIDENT RATE HISTORY

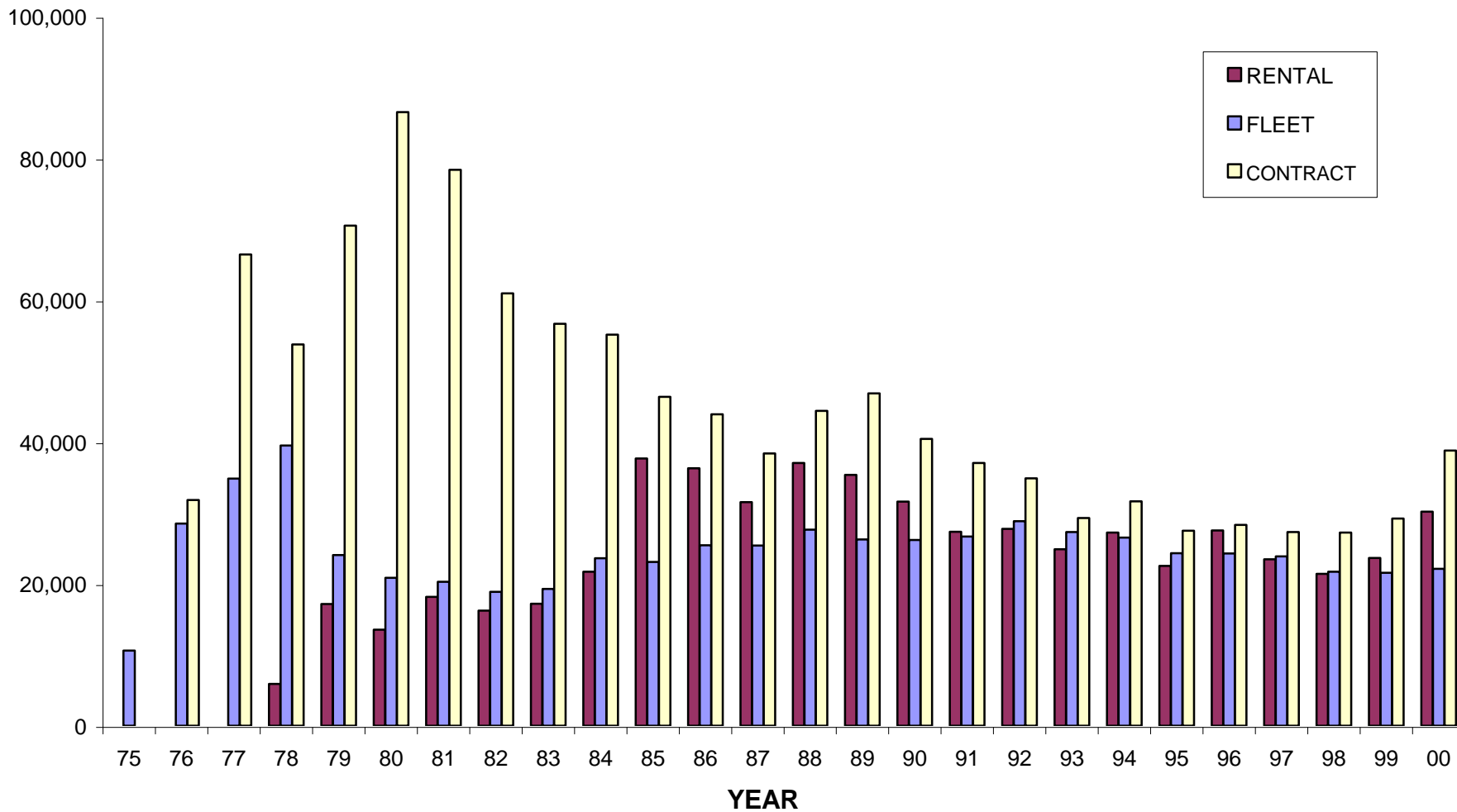
	Rental		Fleet		Contract		Total (Annual)			Total (Historical)		
Year	Accident	Rate	Accident	Rate	Accident	Rate	Accident	Accident *	Rate	Accident	Accident*	Rate
75	0	0.00	2	18.87	n/a**	n/a	2	4	18.87	2	4	18.87
76	0	0.00	3	10.51	8	25.13	11	7	18.22	13	11	18.32
77	0	0.00	4	11.47	11	16.56	15	4	14.81	28	15	16.25
78	0	0.00	4	10.12	8	14.87	12	2	12.10	40	17	14.73
79	1	5.82	3	12.46	8	11.34	12	6	10.73	52	23	13.56
80	0	0.00	6	28.75	8	9.24	14	2	11.57	66	25	13.09
81	1	5.50	1	4.92	9	11.48	11	1	9.41	77	26	12.39
82	1	6.16	6	31.79	5	8.20	12	1	12.49	89	27	12.41
83	1	5.81	0	0.00	4	7.06	5	1	5.36	94	28	11.60
84	2	9.20	1	4.23	5	9.06	8	2	7.96	102	30	11.19
85	1	2.65	1	4.32	2	4.31	4	4	3.73	106	34	10.41
86	2	5.51	4	15.72	7	15.94	13	3	12.30	119	37	10.59
87	0	0.00	3	11.80	3	7.81	6	0	6.29	125	37	10.25
88	3	8.10	2	7.23	1	2.25	6	0	5.50	131	37	9.86
89	3	8.48	2	7.61	3	6.40	8	2	7.37	139	39	9.68
90	5	15.82	1	3.82	2	4.94	8	0	8.14	147	39	9.58
91	6	21.93	2	7.50	0	0.00	8	1	8.78	155	40	9.53
92	0	0.00	8	27.74	0	0.00	8	0	8.74	163	40	9.49
93	2	8.04	1	3.66	1	3.41	4	2	4.91	167	42	9.28
94	1	3.67	2	7.53	1	3.16	4	0	4.68	171	42	9.07
95	3	13.30	1	4.11	1	3.63	5	1	6.72	176	43	8.98
96	2	7.26	4	16.46	1	3.53	7	0	8.73	183	43	8.97
97	2	8.52	4	16.73	2	7.32	8	0	10.71	191	43	9.03
98	2	9.34	2	9.20	3	11.02	7	1	9.95	198	44	9.06
99	1	4.22	1	4.63	2	6.84	4	1	5.37	202	45	8.94
00	2	6.62	1	4.51	2	5.15	5	0	5.48	207	45	8.81
Total	41	7.12	69	10.74	97	8.56	207	45	8.81			

* Non-Chargeable accidents

** Contract flight hours not available in 1975.

TOTAL FLIGHT HOURS

HOURS



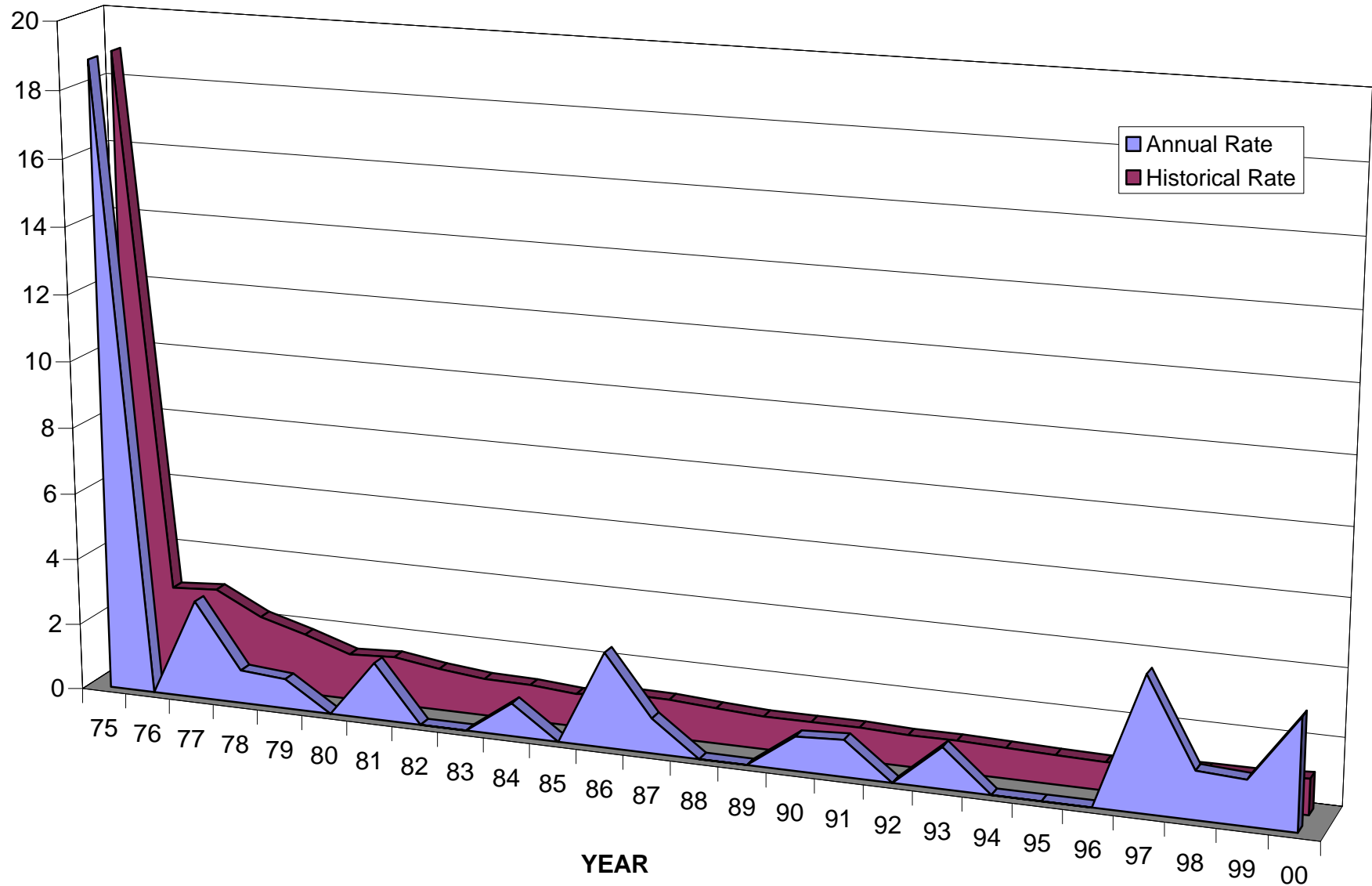
TOTAL FLIGHT HOURS

Year	Rental	Fleet	Contract	Total (Annual)	Total (Historical)
75	0.0	10,598.8	n/a*	10,598.8	10,598.8
76	0.0	28,523.4	31,833.4	60,356.8	70,955.6
77	0.0	34,865.2	66,442.1	101,307.3	172,262.9
78	5,890.0	39,528.1	53,784.9	99,203.0	271,465.9
79	17,180.8	24,072.7	70,528.1	111,781.6	383,247.5
80	13,551.9	20,865.6	86,515.1	120,932.6	504,180.1
81	18,173.0	20,284.4	78,381.5	116,838.9	621,019.0
82	16,223.5	18,876.4	60,953.0	96,052.9	717,071.9
83	17,193.1	19,286.5	56,694.9	93,174.5	810,246.4
84	21,727.4	23,605.8	55,143.1	100,476.3	910,722.7
85	37,686.3	23,095.5	46,396.4	107,178.2	1,017,900.9
86	36,321.0	25,431.7	43,909.8	105,662.5	1,123,563.4
87	31,514.7	25,408.9	38,397.4	95,321.0	1,218,884.4
88	37,036.9	27,667.3	44,401.7	109,105.9	1,327,990.3
89	35,357.9	26,283.9	46,853.0	108,494.8	1,436,485.1
90	31,603.4	26,188.2	40,462.7	98,254.3	1,534,739.4
91	27,360.9	26,660.7	37,051.5	91,073.1	1,625,812.5
92	27,763.2	28,834.8	34,885.9	91,483.9	1,717,296.4
93	24,890.4	27,317.2	29,288.6	81,496.2	1,798,792.6
94	27,240.4	26,533.5	31,640.8	85,414.7	1,884,207.3
95	22,547.1	24,325.7	27,514.6	74,387.4	1,958,594.7
96	27,530.4	24,300.7	28,328.9	80,160.0	2,038,754.7
97	23,462.5	23,895.7	27,313.0	74,671.2	2,113,425.9
98	21,415.8	21,734.9	27,227.2	70,377.9	2,183,803.8
99	23,645.6	21,573.6	29,205.5	74,424.7	2,258,228.5
00	30,171.6	22,137.6	38,787.7	91,096.9	2,349,325.4
Total	575,487.8	641,896.8	1,131,940.8	2,349,325.4	

* Contract flight hours not available in 1975.

FATAL ACCIDENT RATE HISTORY

RATE



	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
■ Annual Rate	18.87	0.00	2.96	1.00	0.89	0.00	1.71	0.00	0.00	0.99	0.00	2.84	1.04	0.00	0.00	1.02	1.10	0.00	1.23	0.00	0.00	0.00	4.01	1.42	1.34	3.29
■ Historical Rate	18.87	2.81	2.90	2.21	1.83	1.38	1.45	1.26	1.11	1.09	0.98	1.16	1.14	1.05	0.97	0.98	0.98	0.93	0.94	0.90	0.86	0.83	0.94	0.96	0.97	1.06

Accident rate per 100,000 flight hours

Graph 3

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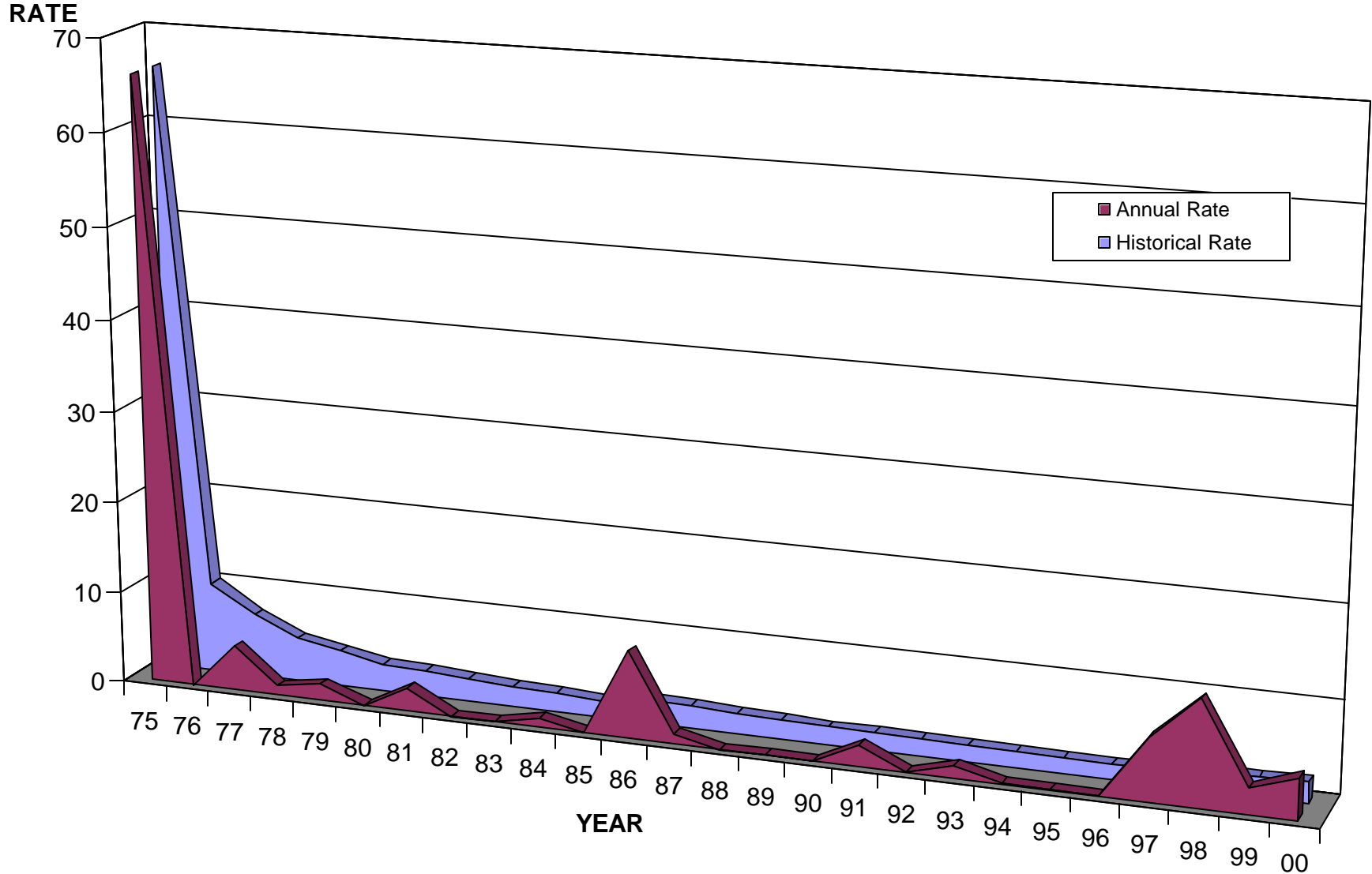
FATAL ACCIDENT RATE HISTORY

	Rental		Fleet		Contract		Total (Annual)			Total (Historical)		
Year	Accident	Rate	Accident	Rate	Accident	Rate	Accident	Accident *	Rate	Accident	Accident *	Rate
75	0	0.00	2	18.87	0	n/a**	2	1	18.87	2	1	18.87
76	0	0.00	0	0.00	0	0.00	0	3	0.00	2	4	2.81
77	0	0.00	0	0.00	3	4.51	3	0	2.96	5	4	2.90
78	0	0.00	1	2.53	0	0.00	1	1	1.00	6	5	2.21
79	0	0.00	1	4.15	0	0.00	1	0	0.89	7	5	1.83
80	0	0.00	0	0.00	0	0.00	0	2	0.00	7	7	1.38
81	0	0.00	0	0.00	2	2.55	2	0	1.71	9	7	1.45
82	0	0.00	0	0.00	0	0.00	0	0	0.00	9	7	1.26
83	0	0.00	0	0.00	0	0.00	0	0	0.00	9	7	1.11
84	1	4.60	0	0.00	0	0.00	1	1	0.99	10	8	1.09
85	0	0.00	0	0.00	0	0.00	0	1	0.00	10	9	0.98
86	1	2.75	0	0.00	2	4.55	3	0	2.84	13	9	1.16
87	0	0.00	0	0.00	1	2.60	1	0	1.04	14	9	1.14
88	0	0.00	0	0.00	0	0.00	0	0	0.00	14	9	1.05
89	0	0.00	0	0.00	0	0.00	0	0	0.00	14	9	0.97
90	1	3.16	0	0.00	0	0.00	1	0	1.02	15	9	0.98
91	1	3.65	0	0.00	0	0.00	1	0	1.10	16	9	0.98
92	0	0.00	0	0.00	0	0.00	0	0	0.00	16	9	0.93
93	1	4.02	0	0.00	0	0.00	1	2	1.23	17	11	0.94
94	0	0.00	0	0.00	0	0.00	0	0	0.00	17	11	0.90
95	0	0.00	0	0.00	0	0.00	0	1	0.00	17	12	0.86
96	0	0.00	0	0.00	0	0.00	0	0	0.00	17	12	0.83
97	0	0.00	1	4.18	2	7.32	3	0	4.01	20	12	0.94
98	1	4.67	0	0.00	0	0.00	1	0	1.42	21	12	0.96
99	1	4.22	0	0.00	0	0.00	1	0	1.34	22	12	0.97
00	1	3.31	0	0.00	2	5.15	3	0	3.29	25	12	1.06
Total	8	1.39	5	0.77	12	1.06	25	12	1.06			

* Non-chargeable fatal accidents.

** Contract flight hours not available in 1975.

FATALITY RATE HISTORY



	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
Annual Rate	66.04	0.00	4.94	1.00	1.79	0.00	2.56	0.00	0.00	0.99	0.00	9.46	1.04	0.00	0.00	0.00	2.20	0.00	1.23	0.00	0.00	0.00	6.69	11.36	2.68	4.39
Historical Rate	66.04	9.87	6.97	4.79	3.91	2.98	2.89	2.51	2.22	2.08	1.86	2.58	2.46	2.26	2.09	1.95	1.97	1.86	1.83	1.75	1.68	1.62	1.80	2.11	2.12	2.21

FATALITY RATE HISTORY

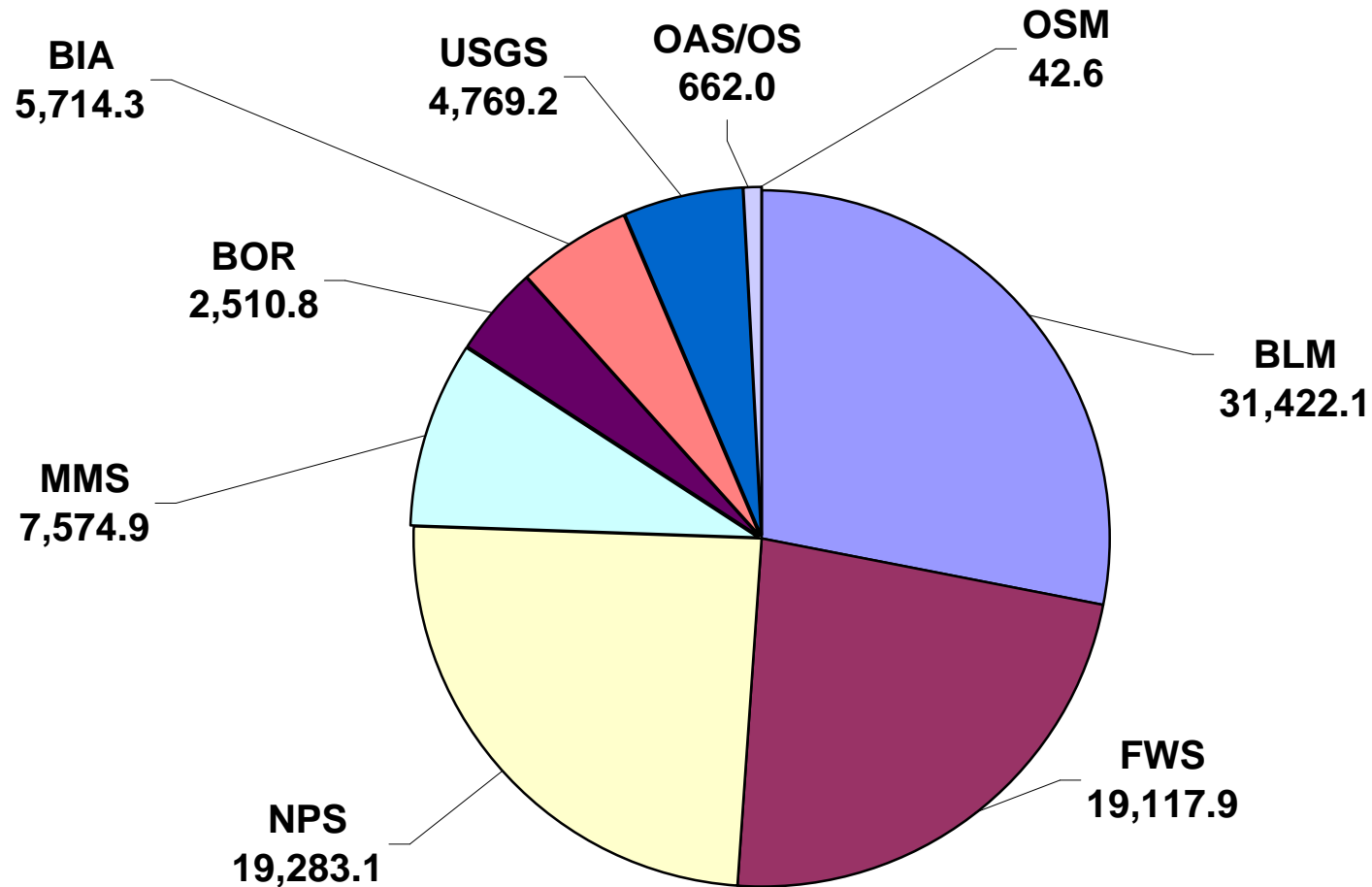
	Rental		Fleet		Contract		Total (Annual)			Total (Historical)		
Year	Fatalities	Rate	Fatalities	Rate	Fatalities	Rate	Fatalities	Fatalities*	Rate	Fatalities	Fatalities*	Rate
75	0	0.00	7	66.04	0	n/a*	7	3	66.04	7	3	66.04
76	0	0.00	0	0.00	0	0.00	0	13	0.00	7	16	9.87
77	0	0.00	0	0.00	5	7.52	5	0	4.94	12	16	6.97
78	0	0.00	1	2.53	0	0.00	1	1	1.00	13	17	4.79
79	0	0.00	2	8.31	0	0.00	2	0	1.79	15	17	3.91
80	0	0.00	0	0.00	0	0.00	0	5	0.00	15	22	2.98
81	0	0.00	0	0.00	3	3.82	3	2	2.56	18	24	2.89
82	0	0.00	0	0.00	0	0.00	0	0	0.00	18	24	2.51
83	0	0.00	0	0.00	0	0.00	0	0	0.00	18	24	2.22
84	1	4.60	0	0.00	0	0.00	1	2	0.99	19	26	2.08
85	0	0.00	0	0.00	0	0.00	0	1	0.00	19	27	1.86
86	4	11.01	0	0.00	6	13.66	10	4	9.46	29	31	2.58
87	0	0.00	0	0.00	1	2.60	1	1	1.04	30	32	2.46
88	0	0.00	0	0.00	0	0.00	0	0	0.00	30	32	2.26
89	0	0.00	0	0.00	0	0.00	0	0	0.00	30	32	2.09
90	0	0.00	0	0.00	0	0.00	0	1	0.00	30	33	1.95
91	2	7.31	0	0.00	0	0.00	2	1	2.20	32	34	1.97
92	0	0.00	0	0.00	0	0.00	0	0	0.00	32	34	1.86
93	1	4.02	0	0.00	0	0.00	1	4	1.23	33	38	1.83
94	0	0.00	0	0.00	0	0.00	0	0	0.00	33	38	1.75
95	0	0.00	0	0.00	0	0.00	0	1	0.00	33	39	1.68
96	0	0.00	0	0.00	0	0.00	0	0	0.00	33	39	1.62
97	0	0.00	1	4.18	4	14.65	5	2	6.69	38	41	1.80
98	8	37.36	0	0.00	0	0.00	8	1	11.36	46	42	2.11
99	2	8.45	0	0.00	0	0.00	2	0	2.68	48	42	2.12
00	3	9.94	0	0.00	1	2.57	4	2	4.39	52	44	2.21
Total	21	3.64	11	1.71	20	1.76	52	44	2.21			

* Non-DOI fatalities associated with DOI aircraft accidents.

** Contract flight hours not available in 1975.

BUREAU FLIGHT HOURS

FY 00



Total flight hours - 91,096.9

BUREAU STATISTICS

5 YEAR HISTORY

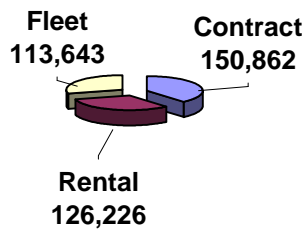
Bureau	Statistic	FY 96	FY 97	FY 98	FY 99	FY 00	TOTAL
BLM	Hours	26,248.6	21,688.0	17,959.0	20,780.8	31,422.1	118,098.5
	Accidents	0	2	3(1)	2(1)	3	10(2)
	Rate	0.0	9.2	16.7	9.6	9.5	8.5
FWS	Hours	16,255.0	17,504.7	18,315.9	17,209.5	19,117.9	88,403.0
	Accidents	1	2	2	1	1	7
	Rate	6.2	11.4	10.9	5.8	5.2	7.9
NPS	Hours	17,998.3	17,419.6	16,742.3	18,177.5	19,283.1	89,620.8
	Accidents	3	2	0	0	1	6
	Rate	16.7	11.5	0.0	0.0	5.2	6.7
MMS	Hours	6,073.0	6,131.5	6,399.1	6,537.2	7,574.9	32,715.7
	Accidents	0	0	0	0	0	0
	Rate	0.0	0.0	0.0	0.0	0.0	0.0
BOR	Hours	3,058.9	3,045.6	2,626.0	2,978.6	2,510.8	14,219.9
	Accidents	0	0	1	0	0	1
	Rate	0.0	0.0	38.1	0.0	0.0	7.0
BIA	Hours	5,489.3	3,721.8	3,145.8	4,083.5	5,714.3	22,154.7
	Accidents	1	1	1	0	0	3
	Rate	18.2	26.9	31.8	0.0	0.0	13.5
USGS	Hours	4,357.0	4,571.4	4,629.3	4,004.2	4,769.2	22,331.1
	Accidents	2	1	0	0	0	3
	Rate	45.9	21.8	0.0	0.0	0.0	13.4
OAS/OS	Hours	656.6	539.3	470.6	619.5	662.0	2,948.0
	Accidents	0	0	0	1	0	1
	Rate	0.0	0.0	0.0	161.4	0.0	33.9
OSM	Hours	23.3	49.3	89.9	33.9	42.6	239.0
	Accidents	0	0	0	0	0	0
	Rate	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	Hours	80,160.0	74,671.2	70,377.9	74,424.7	91,096.9	390,730.7
	Accidents	7	8	7(1)	4(1)	5	31(2)
	Rate	8.7	10.7	9.9	5.3	5.5	7.9

() Indicates non-accountable accidents or non-chargeable accidents.

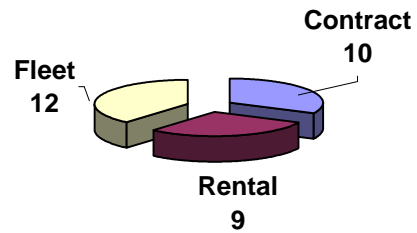
SOURCE COMPARISONS

FY 96 - FY 00

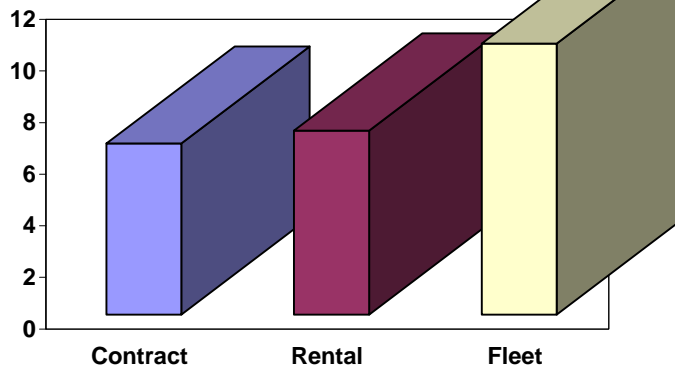
Hours



Accidents



Rates

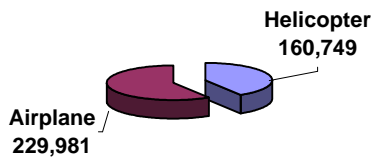


Accident Rate per 100,000 flight hours

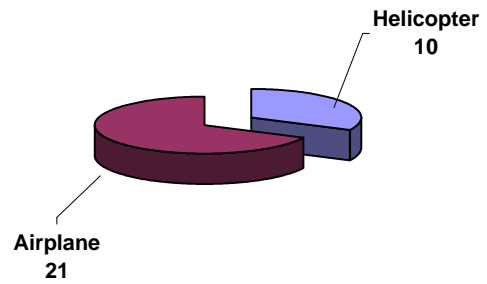
AIRCRAFT COMPARISONS

FY 96 - FY 00

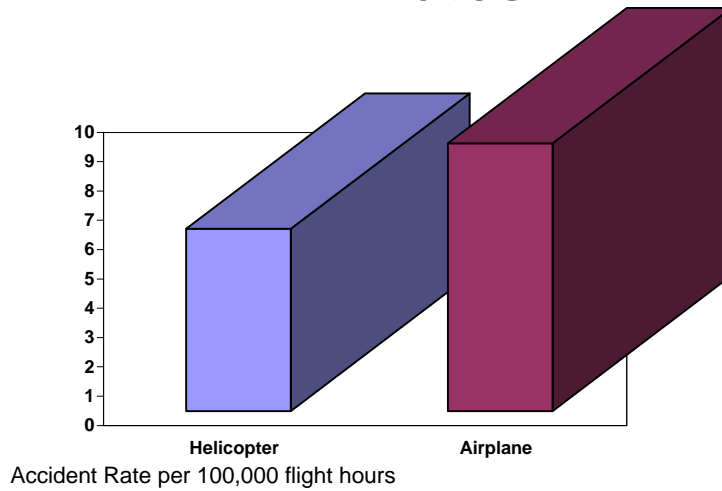
Hours



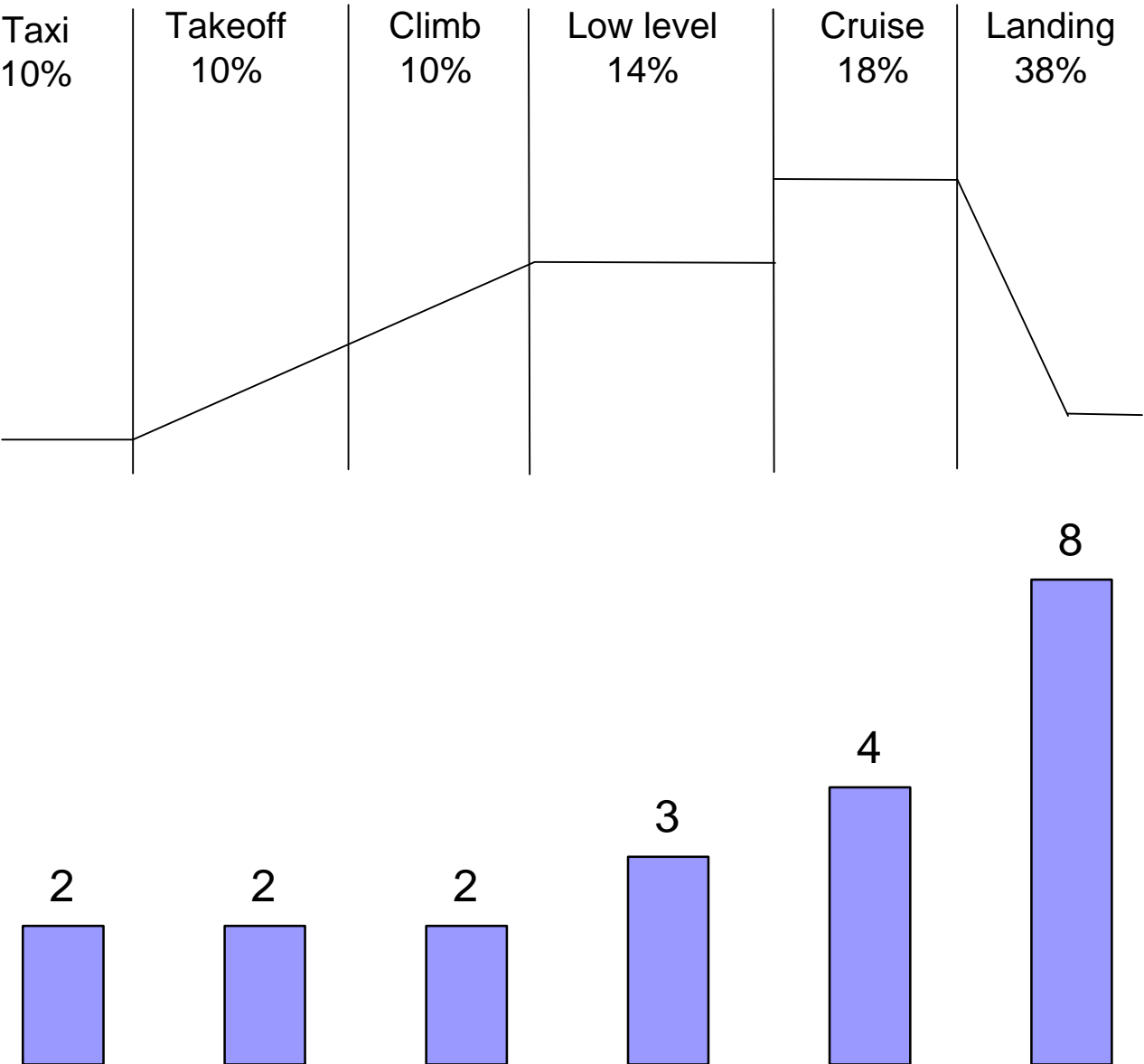
Accidents



Rates

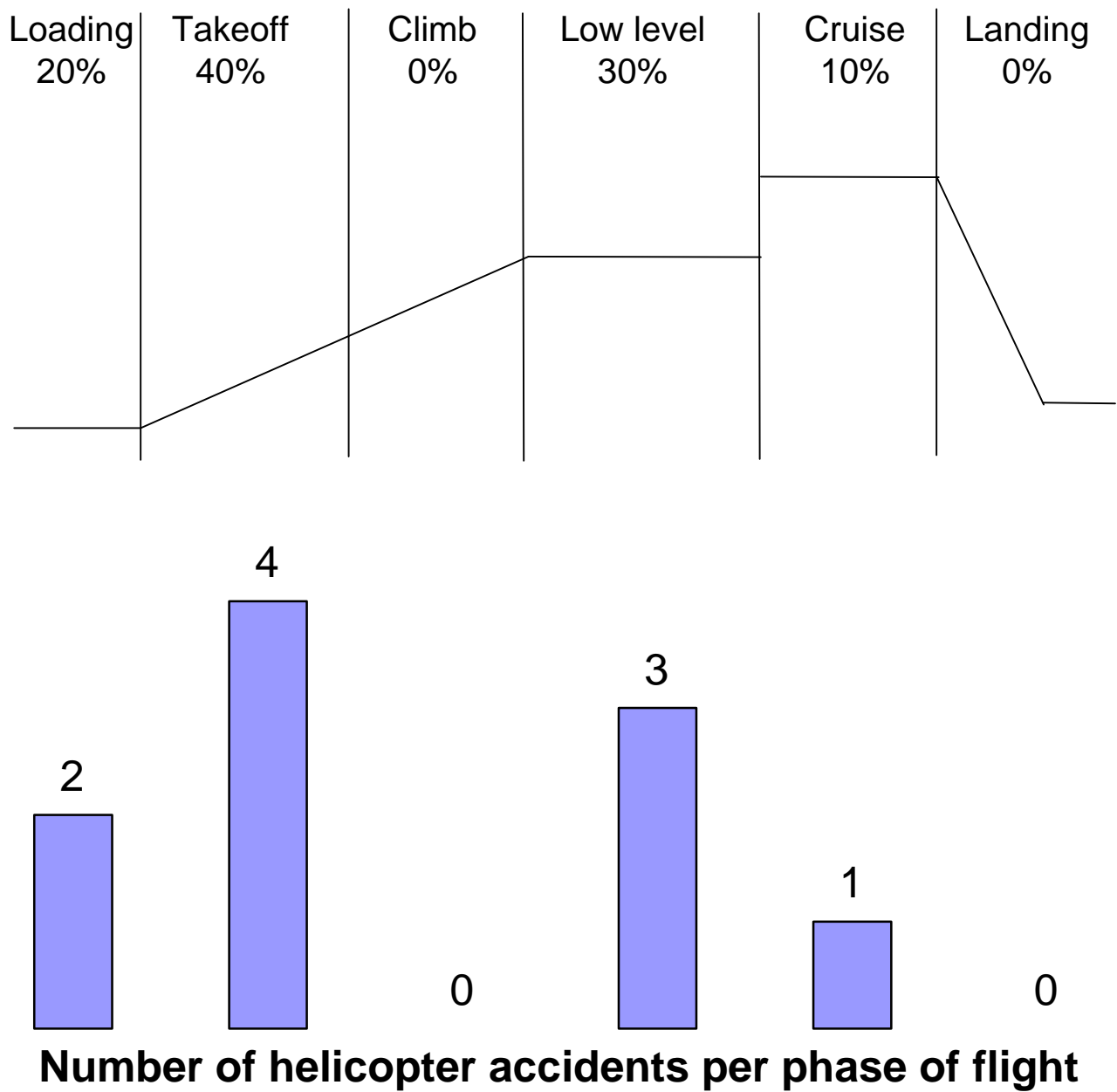


Airplane Phase of Flight Comparisons FY 96 - FY 00



Number of airplane accidents per phase of flight

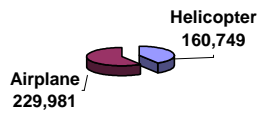
Helicopter Phase of Flight Comparisons FY 96 - FY 00



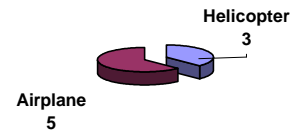
FATAL ACCIDENT COMPARISONS

FY 96 - FY 00

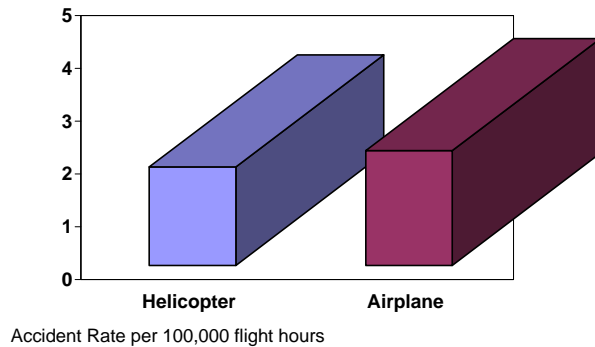
Hours



Accidents



Rates



Section IV

SAFECOM Reporting

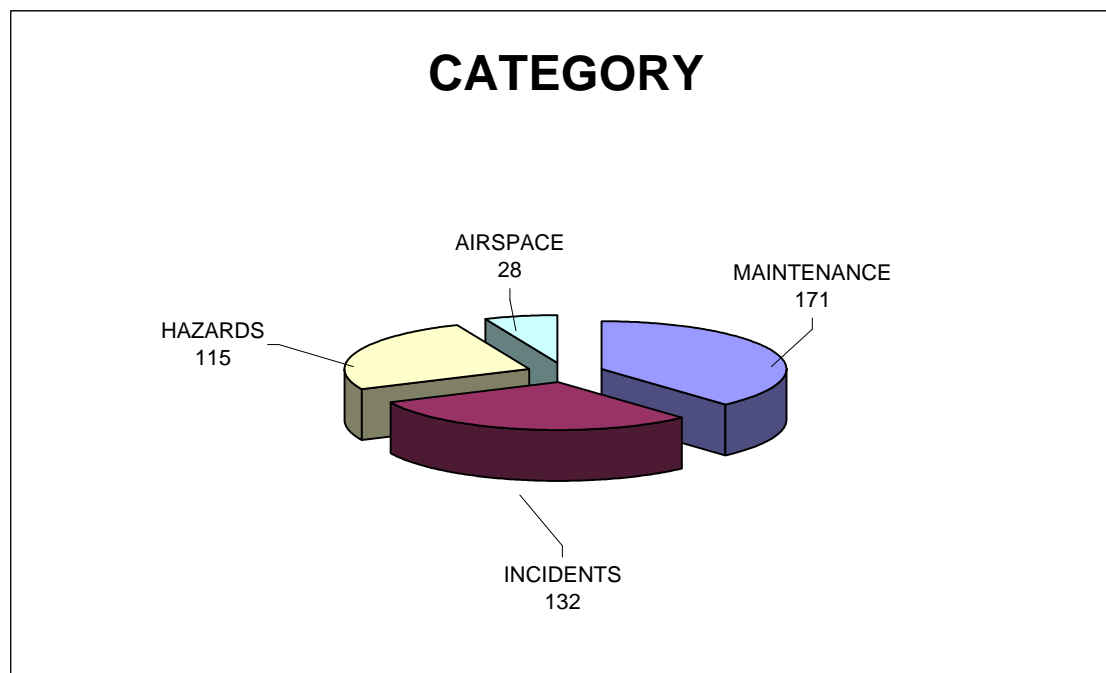
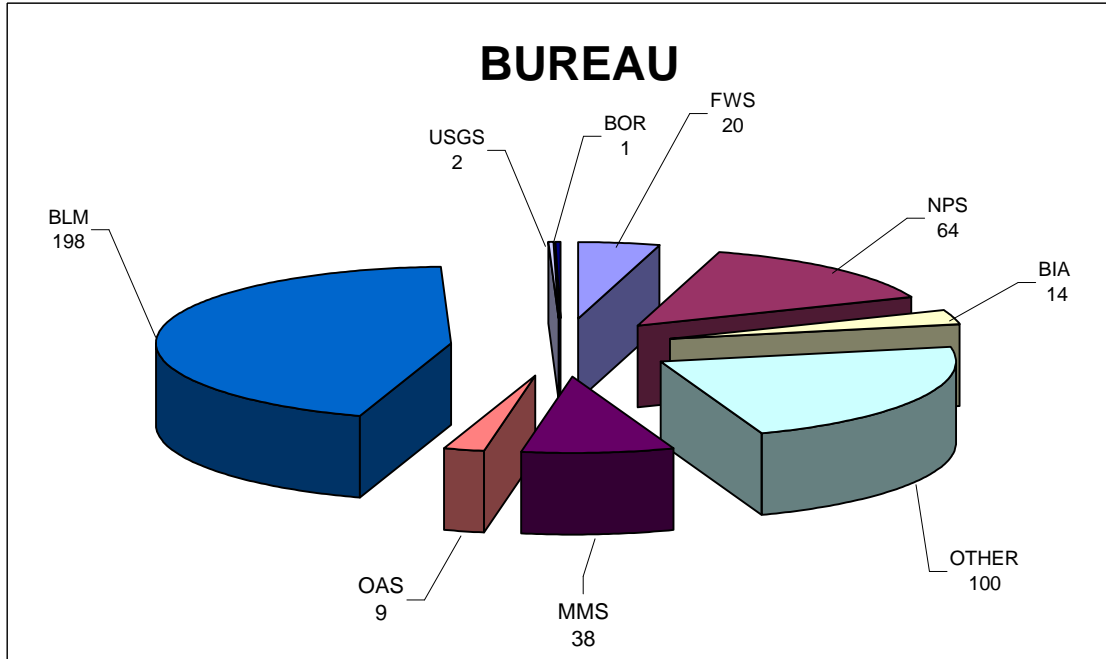
The Department's SAFECOM reporting system is a voluntary incident reporting program designed to identify and eliminate aviation hazards. This program is established in 352 DM 1, *Aviation Safety Program*. While information submitted through this program is shared and acted upon in the interest of accident prevention, every effort is taken to maintain confidentiality. Any person directly associated with DOI aviation activities is encouraged to notify OAS of any issues affecting aviation safety within Interior. SAFECOM reports may be submitted via the OAS website at www.oas.gov.

The OAS Aviation Safety Office received a total of 446 SAFECOM reports in FY 00. The subtotals of the FY 00 reports were: 132 aircraft incidents, 28 airspace conflicts, 115 aviation hazards, and 171 aircraft maintenance deficiencies.

Graph 11	Bureau Summary
Graph 12	Category Summary
Graph 13	Incident Summary
Graph 14	Hazard Summary
Graph 15	Maintenance Summary
Graph 16	Airspace Summary

SAFECOM SUMMARY

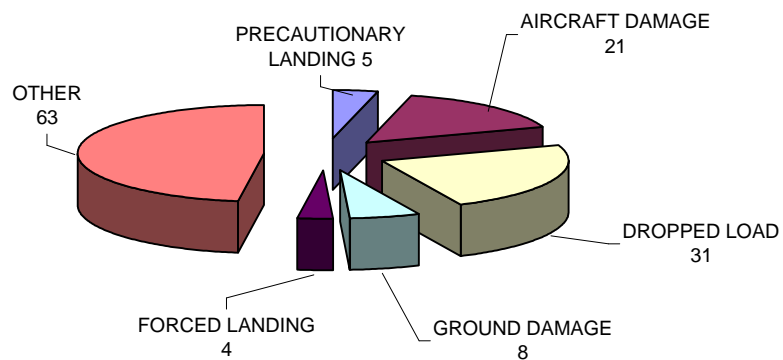
FY 00



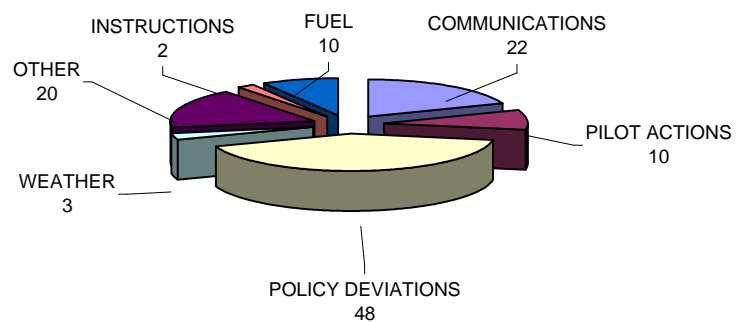
SAFECOM SUMMARY

FY 00

INCIDENT



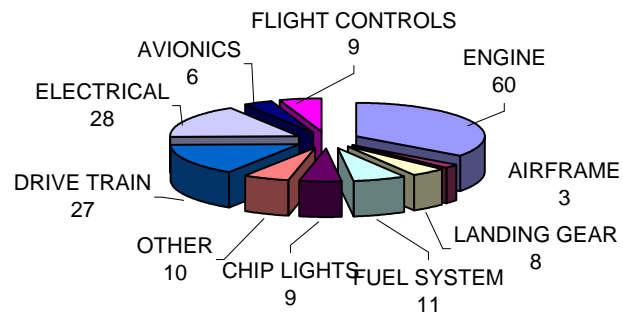
HAZARD



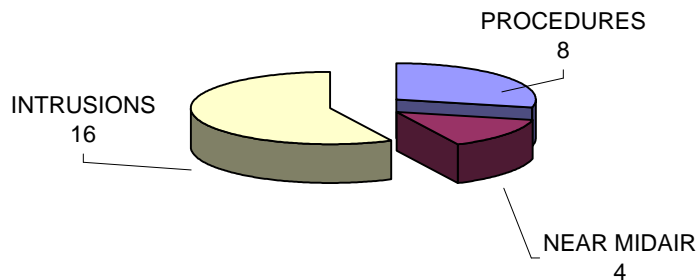
SAFECOM SUMMARY

FY 00

MAINTENANCE



AIRSPACE



GLOSSARY

Aircraft accident. An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

Aircraft incident. An occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations.

Airspace conflict. A near midair collision, intrusion, or violation of airspace rules.

Aviation hazard. Any condition, act, or set of circumstances that exposes an individual to unnecessary risk or harm during aviation operations.

Fatal injury. Any injury which results in death within 30 days of the accident.

Forced landing. A landing necessitated by failure of engines, systems, or components which makes continued flight impossible, and which may or may not result in damage.

Incident with potential. An incident that narrowly misses being an accident and in which the circumstances indicate significant potential for substantial damage or serious injury. Final classification will be determined by the OAS Aviation Safety Manager.

Maintenance deficiency. An equipment defect or failure which affects or could affect the safety of operations, or that causes an interruption to the services being performed.

Non-chargeable accidents. Accidents in which DOI was not exercising operational control over the aircraft at the time of the accident but in which DOI employees or DOI-procured aircraft were involved.

Operator. Any person who causes or authorizes the operation of an aircraft, such as the owner, leasee, or bailee of an aircraft.

Precautionary landing. A landing necessitated by apparent impending failure of engines, systems, or components which makes continued flight inadvisable.

Serious injury. Any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second-or third-degree burns, or any burns affecting more than 5 percent of the body surface.

Glossary

Substantial damage. Damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wing tips are not considered "substantial damage" for the purpose of 49 CFR Part 830.